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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,534	10/20/2003	Michael Mallary	Q01-1071-US2/MAX-012AUS	9333

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EXAMINER

RICKMAN, HOLLY C

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,534

Applicant(s)

MALLARY, MICHAEL

Examiner

Holly Rickman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/20/03 (prelim amendment to spec).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-81 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. It is noted that claims 64-81 claim nominal apparatus and method limitations. As such, Restriction has not been required between product claims 1-63, apparatus claims 64-75 and method claims 76-81. However, if the method/apparatus claims are amended during prosecution to contain significant apparatus limitations or method steps, the claims will be subject to restriction based on original presentation.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 68 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 68 lacks antecedent basis for the phrase the second material in line 6. It is not clear from the claim if the second material described in line 6 is the same as a second material disposed over at least a portion of a surface of the layer of first material as described in lines 8-9. For purposes of examination, the Examiner has interpreted the second material and a second material to be referring to the same material.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-18, 26-41, 64-65, 67-69, 71-73 and 75-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. (WO 98/03972). The examiner has relied upon US 6347016 as an English equivalent of WO98/03972. All reference to Ishida set forth below refer to the US document unless otherwise noted.

Ishida discloses a master information carrier for printing servo patterns comprising a substrate 21 and a ferromagnetic layer 22 having an embossed pattern disposed on the substrate (col. 8, lines 44-55; col. 9, lines 10-21; Fig. 2). It is the examiners position that the portion of the ferromagnetic layer 22 that is represented by the material that is in direct contact with the substrate 21 and up to the base of the embossed pattern is equivalent to the claimed first material. Furthermore, the portion of the ferromagnetic layer 22 that is represented by the embossed portion of the layer is equivalent to the claimed pattern of a second material. The examiner notes that the instant claims do not require that the first and second materials be formed from different materials. Thus, it stands to reason that they can be formed from the same material.

Ishida does not specifically disclose a ferromagnetic material having a permeability of at least about 5. However, the reference does teach the use of ferromagnetic materials including

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NiFe, FeAlSi, CoZrNb and FeTaN (col. 13, lines 1-15). Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to choose a material such as NiFe from this group of disclosed equivalents. The examiner maintains the NiFe meets the claimed permeability limitation as evidenced by the fact that Applicants disclose the use of NiFe for forming a layer as set forth in the claims having a high magnetic permeability. The examiner maintains that magnetic permeability is a material property. Therefore, Ishida necessarily meets the claimed permeability parameters by virtue of the fact that it discloses one of the same materials as used in the presently disclosed invention.

With respect to claim 8, it is the examiners contention that one of ordinary skill in the art would recognize the embossed pattern shown in Ishida as equivalent to the claimed pattern of teeth. With respect to claims 9-11, Ishida teaches that the depth of the embossed pattern is preferably greater than 0.1 micron (col. 10, lines 4-10) and the bit length (I.e. width of embossed portions) is 1-2 micron (col. 10, lines 50-54).

Regarding claims 12-14, Ishida teaches that an adequate thickness for the ferromagnetic layer in the perpendicular direction is 0.1-1 micron (col. 10, lines 53-55). The reference does not teach the specifically claimed thickness range for the first material layer, the reference does not teach that the thickness of the ferromagnetic layer impacts writing ability of the master onto a magnetic disk. In particular, the ferromagnetic layer must be thick enough to generate a sufficient magnetic field for writing into a magnetic disk. However, if the magnetic film is too thick, the writing ability of the master is decreased due to the influence of the demagnetizing field (col. 10, lines 34-54). Further, Ishida teaches that the amount of ferromagnetic material below the embossed portion of the ferromagnetic layer impacts the adhesion of the layer to the

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substrate and the magnetic properties of the substrate, with thicknesses less than 0.1 micron providing insufficient adhesion and insufficient magnetic field gradient, and the thicknesses greater than 0.1 micron providing good adhesion (col. 210, lines 10-17). Thus, the examiner takes the position that the thickness of the ferromagnetic layer disclosed by Ishida below the embossed portion is a result effective variable.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to control the thickness of the ferromagnetic film below the embossed portion to a desired range in order to achieve a desired balance between writing ability and adhesion of the layer to the substrate.

With respect to claim 18, the limitation formed by etching is a process limitation in an article claim. When there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324. Even so, it is noted that Ishida does teach etching the ferromagnetic layer to form the embossed pattern (col. 8, line 57 to col. 9, line 10; col. 15, lines 35-40).

Regarding claim 64, Ishida teaches a system utilizing the master described above wherein a magnetic recording medium is brought into contact with the master and imprints a magnetic pattern in the medium (col. 4, lines 25-37). With respect to claim 65, Ishida teaches a recording medium including a disk (col. 4, lines 24-27). The limitation in claim 67 directed to a recording medium comprising a credit card is an intended use limitation and does not appear to be further limiting in so far as the structure of the product is concerned. (See MPEP 2111.02 for further

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discussion of intended use recitations). The examiner maintains that the structure taught by Ishida is capable of functioning as a credit card and thus, meets the limitations of this claim.

With respect to claims 76-77, Ishida teaches the identical method steps at col. 4, lines 25-35 and col. 4, lines 44-48, respectively.

6. Claims 19-25, 43-63, 66, 70, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida as applied to claims 1 and 26 above, and further in view of Kitaori (US 5796533).

Ishida teaches all of the limitations of the claims as detailed above, except for the claimed third layer of material disposed above the second pattern layer, wherein the third layer has a permeability of less than about 1.1, a thickness of at least 50 angstroms, and is made from carbon, chrome, silicon, and an oxide of the second material.

Kitaori teaches a master information carrier having a protective layer of DLC thereon for use in a contact magnetic transfer process (col. 2, lines 55-60; col. 4, lines 23-40).

It would have been obvious to one of ordinary skill in the art at the time of invention to add a layer of DLC, as taught by Kitaori, on top of the ferromagnetic layer disclosed by Ishida. One of ordinary skill would have been motivated to make this modification due to the increased durability and abrasion resistance one would expect to gain from using a protective overlayer on a ferromagnetic layer. One would have been motivated to select DLC from the other materials listed by Kitaori because the reference recognizes the functional equivalence of each of the materials.

The examiner notes that the contact transfer system of Kitaori has a different structure than that of Ishida. However, both inventions are utilized in contact transfer processes and utilize similar materials. Thus, one of ordinary skill in the art would expect that the two structures would encounter similar problems associated with the wear of the magnetic master as it repeatedly comes into contact with magnetic recording media during the contact transfer process. Thus, one of ordinary skill in the art would have had a reasonable expectation of success in combining the teachings of the two references.

With respect to claim 23, the examiner maintains that although neither reference discloses the claimed thickness, one of ordinary skill in the art would have recognized that the thickness of a protective layer impacts the amount of protection that a protective layer provides, with thicker layers providing more protection than thinner layers. Thus, it would have been obvious to one of ordinary skill in the art to determine the optimal thickness of the protective layer taught by Kitaori and applied to the magnetic layer taught by Ishida in order to provide optimal wear and abrasion resistance to the structure.

Regarding claims 24-25 and 47-48, Ishida does not teach a third material as claimed formed from chrome or silicon. However, Kitaori teaches a master medium for magnetic contact transfer wherein a layer of silicon oxide is placed between a soft magnetic layer and the substrate so as to improve adhesion of the soft magnetic layer to the substrate. Suitable substrates include polycarbonate and suitable soft magnetic materials include NiFe (col. 3, line 59-col. 4, line 21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to add a layer of SiO₂ as taught by Kitaori between the substrate and NiFe layer taught by Ishida in order to improve interlayer adhesion.

With respect to claims 49-59, it is noted that the term comprising is open language which allows for the presence of unrecited layers. The examiner has interpreted the embossed portion of the ferromagnetic layer 22 of Ishida to be equivalent to the claimed first layer, the DLC layer taught by Ishida modified by Kitaori to be equivalent to the claimed second layer, and the adhesion layer used by Ishida as modified by Kitaori to be equivalent to the claimed third layer.

Regarding claims 66, 70, and 74, Ishida does not teach the use of a magnetic tape in a system for magnetic contact printing. The reference does teach that the magnetic master medium is suitable for printing on magnetic media that are in sheet or disk shape, whose surface has a ferromagnetic thin film or coating. (col. 4, lines 30-37) Kitaori discloses a magnetic tape that is suitable for magnetic contact transfer that comprises a substrate having a magnetic thin film deposited on its surface (col. 3, lines 50+).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the magnetic tape disclosed by Kitaori as the magnetic media used by the master medium of Ishida in view of the equivalence of Kitaoris coated tape and the coated sheet taught by Ishida.

Conclusion

7. This is a continuation of applicant's earlier Application No. 09/999,043. All claims are drawn to the same invention claimed in the earlier application and could have been finally

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rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Holly Rickman". The signature is fluid and cursive, with the first name "Holly" being more prominent than the last name "Rickman".

Holly Rickman
Primary Examiner
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March 16, 2005